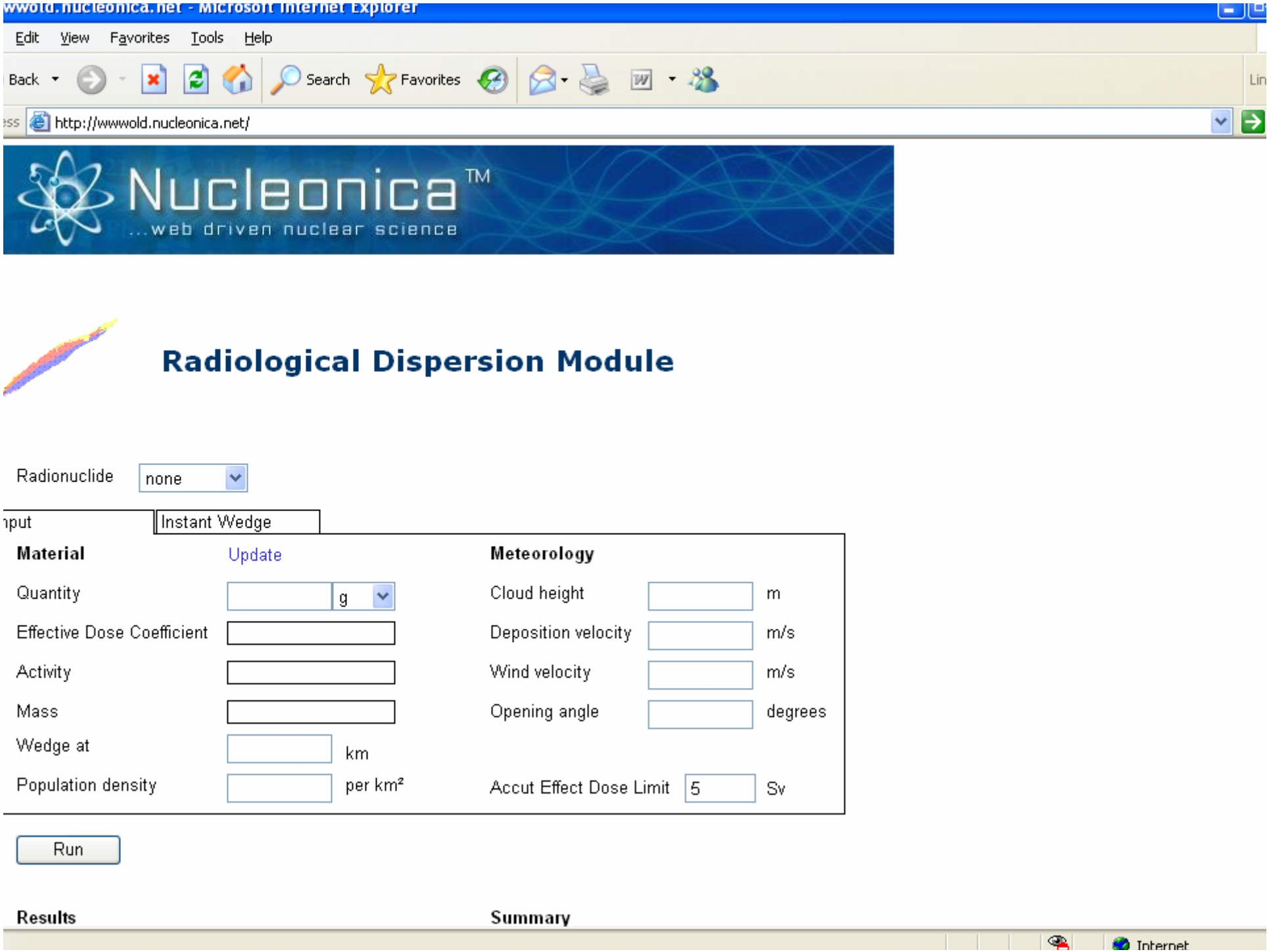
RDD Module

- Start page
- Choose Material and Quantity
- Set the atmospheric and
- environment conditions
- Get the Results and Summary
- Table for successive edges
- Table for an instant edge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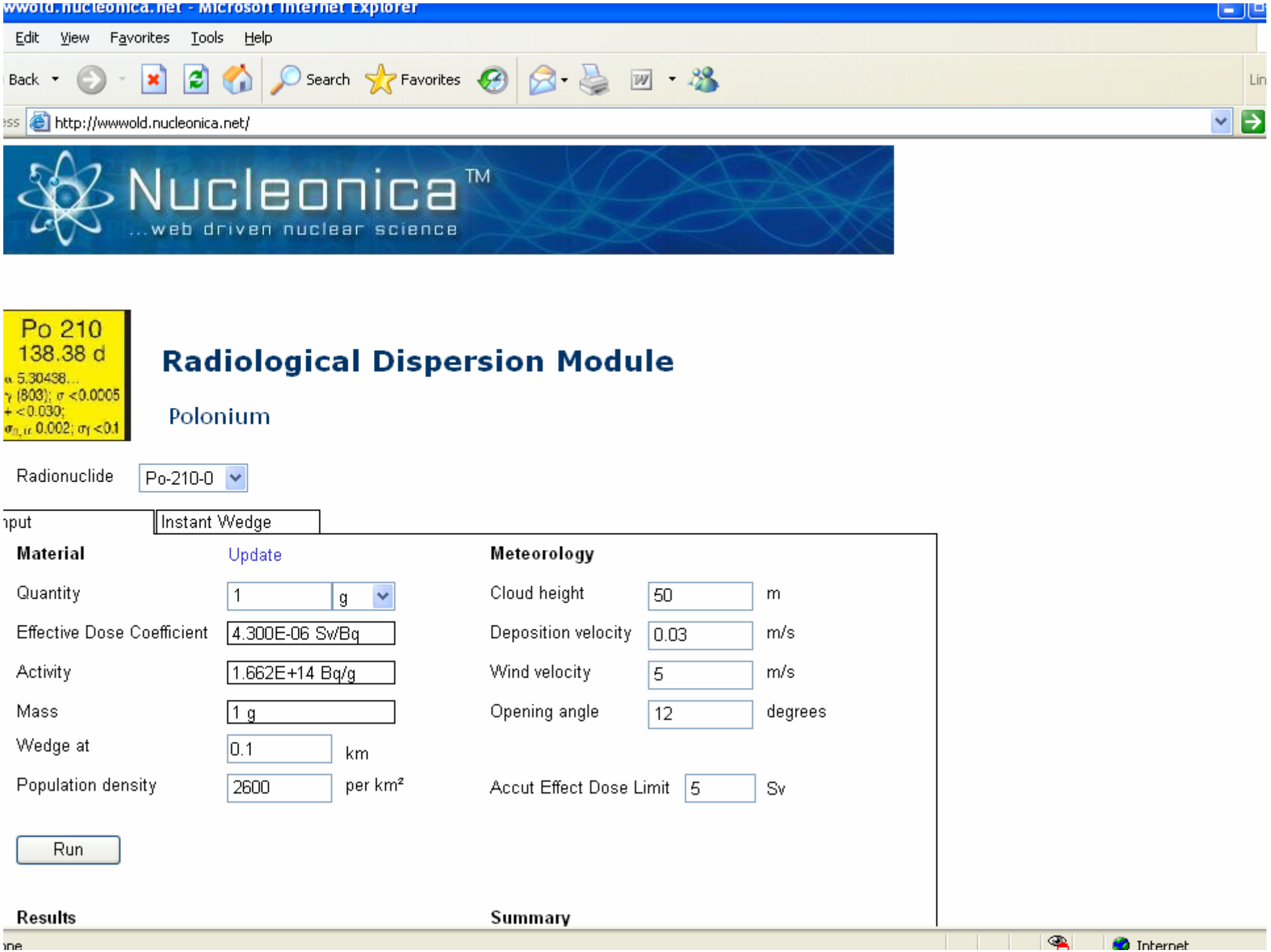
Nucleonica™
...web driven nuclear science
Radiological Dispersion Module
Radionuclide none
nput
Instant Wedge
Material
Update
Quantity
g
Effective Dose Coefficient
Activity
Mass
Wedge at
km
Population density
per km²
Meteorology
Cloud height
m
Deposition velocity
m/s
Wind velocity
m/s
Opening angle
degrees
Accut Effect Dose Limit
5
Sv
Run
Results
Summary
Internet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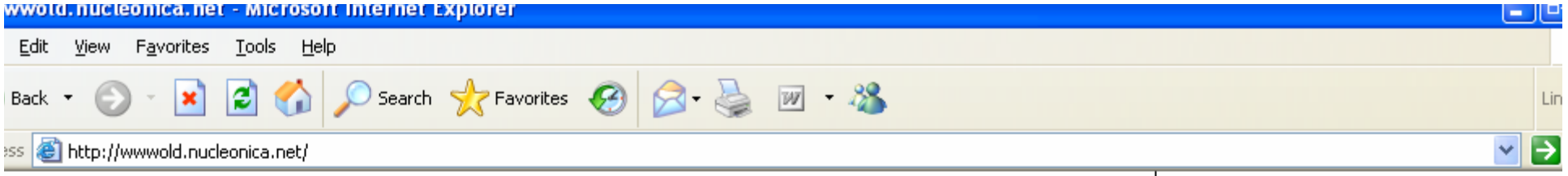
http://wwwold.nucleonica.net/
Nucleonica™
...web driven nuclear science
Po 210
138.38 d
α 5.30438...
γ (803); σ <0.0005
+ <0.030;
σn,α 0.002; σf <0.1
Radiological Dispersion Module
Polonium
Radionuclide
Po-210-0
nput
Instant Wedge
Material
Update
Quantity
1
g
Effective Dose Coefficient
4.300E-06 Sv/Bq
Activity
1.662E+14 Bq/g
Mass
1 g
Wedge at
0.1
km
Population density
2600
per km²
Meteorology
Cloud height
50
m
Deposition velocity
0.03
m/s
Wind velocity
5
m/s
Opening angle
12
degrees
Accut Effect Dose Limit
5
Sv
Run
Results
Summary
Internet



Results

Distance [km]	Dose [mSv]	Time [min]
0.354	5000	1.181
0.061	30000	0.204
0.181	10000	0.603
0.575	3000	1.917
1.537	1000	5.123
3.871	300	12.904
7.507	100	25.025
12.979	30	43.262
18.971	10	63.235

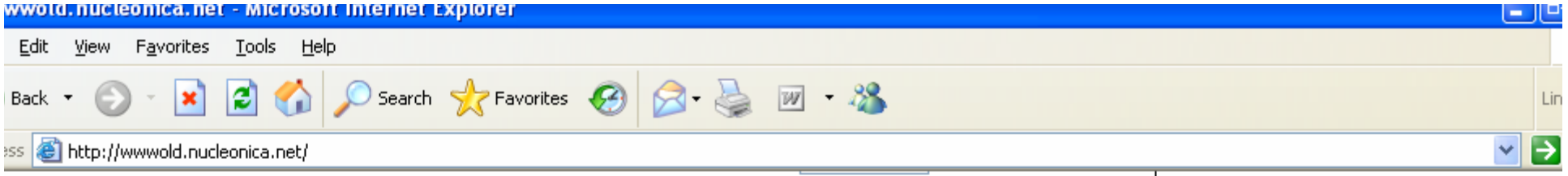
Summary

Characteristic Aerosol Range	8.33E+00	km
Characteristic Aerosol Lifetime	4.63E-01	h
Total intake activity by inhalation	1.87E+09	Bq
Collective Dose	8.03E+03	man·Sv
Number of exces cancers	402	
Number of Accute Effects	34	
Accute Effect Distance	3.54E-01	km
Accute Effect Time	1.18E+00	min

Successive Wedges

Average error: 2.36E+00%

Time [min]	Distance [km]	Airborne Activity [Bq]	Surface Activity Sigma [Bq/m²]	Inhalation Dose [mSv]	Collective Dose [man·Sv]
0.17	0.05	1.653E+014	7.77E+008	3.67E+004	5.01E+001
0.33	0.10	1.643E+014	3.86E+008	1.83E+004	1.00E+002
0.50	0.15	1.633E+014	2.56E+008	1.21E+004	1.50E+002
0.67	0.20	1.623E+014	1.91E+008	9.02E+003	1.99E+002
0.83	0.25	1.613E+014	1.52E+008	7.17E+003	2.48E+002
1.00	0.30	1.604E+014	1.26E+008	5.94E+003	2.96E+002
1.17	0.35	1.594E+014	1.07E+008	5.06E+003	3.45E+002
1.33	0.40	1.585E+014	9.31E+007	4.40E+003	3.93E+002
1.50	0.45	1.575E+014	8.23E+007	3.89E+003	4.41E+002
1.67	0.50	1.566E+014	7.36E+007	3.48E+003	4.88E+002
3.33	1.00	1.474E+014	3.47E+007	1.64E+003	9.48E+002
5.00	1.50	1.389E+014	2.18E+007	1.03E+003	1.38E+003



Activity	1.662E+14 Bq/g	Wind velocity	5	m/s
Mass	1 g	Opening angle	12	degrees
Wedge at	0.1	km		
Population density	2600	per km²	Accut Effect Dose Limit	5 Sv

Run

Results

Distance [km]	Dose [mSv]	Time [min]
0.354	5000	1.181
0.061	30000	0.204
0.181	10000	0.603
0.575	3000	1.917
1.537	1000	5.123
3.871	300	12.904
7.507	100	25.025
12.979	30	43.262
18.971	10	63.235

Summary

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Total intake activity by inhalation	1.87E+09	Bq
Collective Dose	8.03E+03	man·Sv
Number of exces cancers	402	
Number of Accute Effects	34	
Accute Effect Distance	3.54E-01	km
Accute Effect Time	1.18E+00	min

Instant Wedge

Average error: 2.68E-03%

Time [min]	Distance [km]	Airborne Activity [Bq]	Surface Activity Sigma [Bq/m²]	Inhalation Dose [mSv]	Collective Dose [man·Sv]
	0.05		7.77E+008	3.67E+004	5.01E+001
0.33	0.10	1.643E+014	3.86E+008	1.83E+004	1.00E+002
			1		

New features

- Integration into Nucleonica
- Choose a location: coordinates, city, navigation trough a map
- Draw the plum on a background map
- Orientation of the plum
- Downloads and Graphs

Thank You